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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,117	10/31/2001	Trevor William Clyne	43197.240748	8984
826	7590	10/08/2003	EXAMINER	
ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000			SAVAGE, JASON L	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/000,117

Applicant(s)

CLYNE ET AL.

Examiner

Jason L. Savage

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4-12-02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 16-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 6.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-15, drawn to an article, classified in class 428, subclass 567.
 - II. Claim 16, drawn to an article, classified in class 228, subclass 57.
 - III. Claims 17-19, drawn to an article, classified in class 181, subclass 284.
2. Inventions I and II are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as acoustic insulation that does not need to be attached to any substrate material, let alone by welding, and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.
3. Inventions I and II are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate

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product is deemed to be useful as acoustic insulation for buildings as opposed to a vehicle part and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

4. Because these inventions are distinct for the reasons given above and the search required for any one of Groups I-III is not required for any other Group, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Andrew Meunier on 6-19-03 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 16-19 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

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Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claims 1-6, 8-9 and 15 are rejected under 35 U.S.C. 102(a) as being anticipated by Markaki (Article: Development of an Ultralight Stainless Steel Sheet Material).

Markaki teaches a sandwich material comprising two metal plates which are affixed to a fibrous core comprising a network of metal fibers (Introduction and Elastic Properties sections). Markaki further teaches that the meshed network of metal fibers may have an in-plane orientation which would meet the limitation of the fibers being inclined at an acute angle (Elastic Properties Section and Figures 2© and 7(b)).

Regarding claim 2, Markaki teaches that the fibers are bonded together at the crossover points (Electrical Properties Section and Fib 7(b)).

Regarding claims 3 and 4, Markaki teaches stainless steel fibers (Introduction Section).

Regarding claims 5-6 and 15, Markaki teaches that adhesive bonding and brazing may be used form the sandwich material (Elastic Properties Section).

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Regarding claim 8, the fibers depicted in Figure 2© would meet the claim limitation of having an angle less than 60°.

Regarding claim 9, the diameters of the fibers of Markaki is Figures 2(a)-2© are substantially less than 200 µm and thus meet the claim limitation.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Markaki (Article: Development of an Ultralight Stainless Steel Sheet Material).

Markaki teaches what is set forth above however it does not exemplify a structure having a random fiber orientation. However, Markaki does teach that the fibers can have different orientations including specifically teaching the use of transverse, in-plane and angled fibers. It would have been obvious to one of ordinary skill in the art at the time of the invention to have used any orientation, including a random orientation in order to tailor the material properties to the application in which the sandwich material would ultimately be used. It would have been

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within the level of skill of one in the art to recognize that a random fiber orientation would provide the sandwich material with improved stiffness properties in all directions.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Markaki (Article: Development of an Ultralight Stainless Steel Sheet Material) in view of Shelley (Article: Steel Fibers Fill Lightweight Sandwich).

Markaki teaches what is set forth above however it is silent to the total thickness of the composite material but does teach that the facing sheets have a thickness of about 200 μm (Introduction Section). Shelley teaches a sandwich material with a fibrous core having a thickness as little as 1 mm (p. 228, col. 2, second full paragraph). It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the sandwich material of Markaki having a thickness in the range taught by Shelley in order to form a sandwich material having good stiffness and handability.

12. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Markaki (Article: Development of an Ultralight Stainless Steel Sheet Material) in view of Hoppe et al. (US 3,900,651).

Markaki teaches what is set forth above but is silent to the fibers only comprising a portion of the core. Hoppe teaches a sandwich material designed to withstand high stresses having facing layers with a fiber containing core (col. 1, ln. 5-11). Hoppe further teaches that the

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fibers may be synthetic, natural or metallic (col. 2, ln. 56-61) which are embedded in a polymer foam matrix (col. 3, ln. 10-17). It would have been obvious to one of ordinary skill in the art at the time of the invention to have embedded the fibers of Markaki into a foam core such as is taught by Hoppe in order to form a sandwich material having good resistance to high stresses.

Regarding claims 11 and 12, the references are silent to the fiber volume % contained in the core; however, Hoppe teaches that the density of the fiber may preferably vary from 30 to 1200 g/m² (col. 3, ln. 23-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have varied the fiber volume % in the core in order to tailor the mechanical properties for the application for which the sandwich material would ultimately be used. The range of 30 to 1200 g/m² taught by Hoppe is taken as a teaching which obviates the ranges claimed by Applicant.

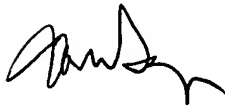
Regarding claim 13, the references are silent to the fibers being a mixture of metallic and non-metallic; however, Hoppe teaches that a variety of fiber materials may be used in the core including synthetic, natural and metallic fibers (col. 2, ln. 56-61). It would have been obvious to one of ordinary skill in the art at the time of the invention to have used any of the recited fiber materials in the core, including a mixture of fibers such as metallic and non-metallic, since all are stated as being suitable materials for the core. Absent a teaching of the criticality of having a mixture of non-metallic and metallic fibers in the core, it would not provide a patentable distinction over the prior art of record.

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13. Any inquiry to this communication or earlier communications from the Examiner should be directed to Jason Savage, whose telephone number is (703)305-0549. The Examiner can normally be reached Monday to Friday from 6:30 AM to 4:00 PM.

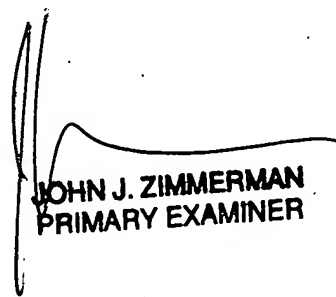
If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Deborah Jones, can be reached on (703)308-3822.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)308-2351.



Jason Savage

9-26-03



JOHN J. ZIMMERMAN
PRIMARY EXAMINER